

--8. (New) The ceramic heater used in an industrial field of semiconductors, according to claim 2, wherein said heat-generation pattern is a combination of a spiral pattern and a bending pattern, and said bending pattern is arranged along outer regions of said disk-shaped ceramic substrate.--

REMARKS

Claims 1-8 are pending. By this Amendment, the specification and claims 1-4 are amended and claims 5-8 are added. Claims 1-4 are amended to recite a curvature of radius within a range of 0.1 mm to 20 mm to distinguish from the applied art. Other amendments are not for substantial reasons of patentability.

Regarding the amendment in claims 1 and 2 and the specification of "aluminum nitride" to --ceramic nitride--, the English-language translation of the specification as filed, included a translation error translating the original Japanese for "ceramic nitride" into "aluminum nitride". (See PCT/JP00/05462.) Thus, the above amendment corrects this error in claims 1 and 2, and some portions of the specification. Other portions of the specification will be reviewed, and where found, the translation errors will also be corrected in a future Supplemental Amendment. Reconsideration of the application is respectfully solicited.

The attached Appendix includes marked-up copies of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicant thanks Examiner Paik for the courtesies extended to Applicant's representative, Mr. Paul Tsou, during the August 22 personal interview. The substance of the personal interview is incorporated in the remarks below.

The Office Action objects to the specification and Abstract. The specification is amended and a new Abstract is provided to obviate the above objections. Withdrawal of the objection to the specification and Abstract is respectfully solicited.

The Office Action rejects claims 1 and 2 under 35 U.S.C. §102(b) over Kimura (U.S. Patent 5,331,134); and claim 2 under 35 U.S.C. §102(e) over Yoshida et al. (U.S. Patent 6,080,970). This rejection is respectfully traversed.

Kimura discloses a ceramic heater having bent portions which have a radius of curvature of substantially zero. (See Figs. 1a and 1b.) Yoshida discloses a heating resistor, as shown in Fig. 2, for example. The heating resistor has arced portions 4a-4g which are joined to straight portions 4h-4m at location identified as P. The joint portions P that have curvature of radius substantially equal to zero. Thus, as agreed to during the interview, Kimura or Yoshida does not disclose a bending portion...having a curvature radius within a range of 0.1 mm to 20 mm, as recited in claims 1 or 2. Accordingly, Kimura or Yoshida does not disclose the subject matter recited in claims 1 or 2. Withdrawal of the rejection of claims 1 and 2 under 35 U.S.C. §102(b) and claim 2 under 35 U.S.C. §102(e) is respectfully solicited.

The Office Action rejects claims 3 and 4 under 35 U.S.C. §103(a) over Yukiyoshi (JP 53-006936); and rejects claim 4 under 35 U.S.C. §103(a) over Bielan (U.S. Patent 2,409,244).

As discussed during the interview, Yukiyoshi is directed to a heating element for a cooking stove, and thus Yukiyoshi's substrate cannot be made of either ceramic nitride or ceramic carbide, since these ceramic materials generate toxic gasses, such as ammonia gas or carbon monoxide, when in contact with water, for example. Additionally, Yukiyoshi's heating element is not for the purpose of industrial semiconductors. Thus, Yukiyoshi does not disclose or suggest a ceramic substrate...made of at least one selected from a group essentially consisting of ceramic nitride and ceramic carbide, as recited in claims 1 and 2.

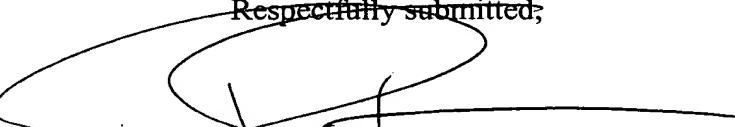
Similarly, Bielan discloses a burner constructed entirely of glass. (See col. 1, lines 5-6.) Thus, Bielan does not disclose or suggest a ceramic substrate...made of at least one selected from a group essentially consisting of ceramic nitride and ceramic carbide, as recited in claims 1 and 2.

In view of the above, Yokiyoshi or Bielan does not disclose or suggest the subject matter recited in claims 1 and 2. Claims 3 and 4 (and new claim 5) depend from claim 1 (corresponding new claims 6 -7 and 8 depend from claim 2). Accordingly, Yokiyoshi would not have rendered obvious the subject matter recited in claims 3 and 4, and Bielan would not have rendered obvious the subject matter recited in claim 4. Withdrawal of the rejection of claims 3 and 4 under 35 U.S.C. §103(a) is respectfully solicited.

For at least the reasons set for the above, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,


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JAO:PT/sld

Attachments:

Appendix
Petition for Extension of Time
Substitute Abstract

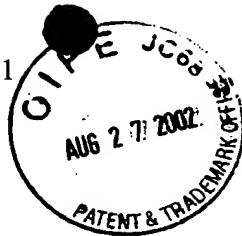
Date: August 27, 2002

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ABSTRACT

BH
A ceramic heater used in an industrial field of semiconductors has a disk-shaped ceramic substrate and a heat-generation pattern disposed on or within the substrate. The disk-shaped ceramic substrate has a thickness of 18 mm or less and it is made of at least one selected from the group essentially consisting of ceramic nitride and ceramic carbide. The heat-generation pattern has a bending portion which describes an arc having a curvature radius within a range of 0.1 mm to 20 mm.



APPENDIX

Changes to Claims:

Claims 5-8 are added.

The following is a marked-up version of the amended claims:

1. (Amended) A ceramic heater used in an industrial field of semiconductors,
comprising:

_____ a disk-shaped ceramic substrate; and
_____ which has a heat-generation body pattern formed disposed on a surface
thereof said disk-shaped ceramic substrate,
_____ wherein the said disk-shaped ceramic substrate has a diameter of 200 mm or
more and said ceramic substrate is made of at least one selected from the-a group essentially
consisting of aluminum ceramic nitride and ceramic carbide; and
_____ the said heat-generation body pattern has a bending portion which describes an
arc having a curvature radius within a range of 0.1 mm to 20 mm.

2. (Amended) A ceramic heater used in an industrial field of semiconductors,
comprising:

_____ a disk-shaped ceramic substrate; and
_____ which has a heat-generation body pattern formed inside thereof, disposed
within said disk-shaped ceramic substrate,
_____ wherein said disk-shaped ceramic substrate has a diameter of 200 mm or more
and said theceramic substrate is made of at least one selected from the-a group essentially
consisting of aluminum ceramic nitride and ceramic carbide; and,
_____ the said heat generation body pattern is united with the ceramic substrate, and
the heat generation body pattern has a bending portion which describes an arc having a
curvature radius within a range of 0.1 to 20 mm.

3. (Amended) A The ceramic heater used in an industrial field of semiconductors, according to claim 1, comprising a disk-shaped ceramic substrate which has a heat generation body pattern formed on a surface thereof, wherein the said heat-generation body pattern has a bending portion which describes an arc having a curvature radius width within a range of 0.1 to 20 mm.

4. (Amended) A The ceramic heater used in an industrial field of semiconductors, according to claim 1, comprising a disk-shaped ceramic substrate which has a heat generation body pattern formed inside thereof, wherein the said heat-generation body pattern is a combination of a spiral pattern and a has a bending portion which describes an arc having a curvature radius within a range of 0.1 to 20 mm pattern.